

PETERSEN'S SECOND COMET.

Observations.

CAMBRIDGE. Northumberland Equatoreal. (Professor Challis)

	Greenwich M.T.			R.A.			Log $\frac{p}{P}$	N.P.D.	Log $\frac{q}{P}$	No. of Comps.	Star.
1848.	h	m	s	h	m	s		° ' "			
Nov. 4	11	31	34.9	18	59	33.90	8.851	32 14 36.3	-9.791	2	<i>a</i>
		41	7.5			33.63	8.842	43.2	9.804	12	<i>b</i>
8	9	22	40.6	19	17	45.37	8.845	35 8 47.3	9.558	6	<i>c</i>
9	7	56	18.5	22	8.22		8.768	35 54 5.0	9.281	8	<i>d</i>
10	9	45	18.2	27	10.23		8.832	36 47 34.6	9.620	6	<i>e</i>
13	6	24	45.4	40	24.47		8.567	39 18 56.5	9.035	1	<i>f</i>
		43	52.6			27.59	8.609	19 36.2	9.112	7	<i>g</i>
14	7	57	51.3	45	19.94		8.730	40 18 25.3	9.417	6	<i>h</i>
15	7	18	8.2	19	49	46.29	8.656	41 14 53.0	9.306	8	<i>i</i>
21	8	4	4.9	20	17	1.17	8.670	47 38 0.1	9.556	8	<i>k</i>
24	6	50	45.0	20	30	0.08	8.508	51 6 35.9	9.489	6	<i>l</i>
Dec. 2	8	59	20.2	21	4	5.39	8.644	61 36 20.3	9.776	3	<i>m</i>
	4	7	52 38.7		11	57.51	8.563	64 17 33.6	9.741	6	<i>n</i>
	6	7	19 7.6	21	19	45.79	8.496	67 2 42.8	-9.744	4	<i>o</i>

"The corrections to be applied for parallax in time and arc are represented by p and q ; P is the equatoreal horizontal parallax, or $\frac{8''.5776}{\Delta}$. The following are the authorities for the places of the stars:—

<i>a</i>	B.A.C. 6500	<i>i</i>	Arg. Z. 134, 35
<i>c</i>	Groombridge 2839	<i>k</i>	Groombridge 3157
<i>d</i>	— 2855	<i>l</i>	B.A.C. 7167
<i>e</i>	Arg. Z. 14, 53	<i>m</i>	H. C. $\begin{cases} 41060 \\ 41062 \end{cases}$
<i>f</i>	B.A.C. 6763	<i>n</i>	H. C. 41503
<i>h</i>	Arg. Z. 21, 99	<i>o</i>	B.A.C. 7474

The assumed apparent place, Nov. 13, of the star *g*, viz. R.A. = $19^h 39^m 42^s.28$, N.P.D. = $39^\circ 17' 10''.5$, was determined by one comparison by the equatoreal with B.A.C. 6763; and the mean place of the star *b* was found by meridian observations to be as follows:—

1848, Jan. 0. R.A. = $18^h 58^m 41^s.00$; N.P.D. = $32^\circ 12' 31''.6$.

HAMBURG. Equatoreal. (M. C. Rümker.)

	Hamburg M.T.			R.A.			Decl.
1848.	h	m	s	h	m	s	° ' "
Nov. 7	16	34	44.4	19	14	22.20	+55 25 16.1
8	16	36	43.4	19	3	7.3	54 38 3.5
14	6	20	3.4	44	52	42	49 47 1.2
15	5	57	6.5	19	49	23.55	48 50 9.3
19	5	45	30.9	20	7	31.71	44 43 40.2
20	5	45	16.3	12	1	8.9	43 37 44.8
21	5	52	58.7	16	30	9.6	42 30 5.3
22	7	54	12.9	21	18	5.8	41 15 15.1
23	7	5	13.8	25	33	40	40 6 59.6
25	7	29	33.3	20	34	21.16	+37 39 43.8

HAVERHILL.

(Mr. W. W. Boreham.)

Greenwich M.T.				R.A.			N.P.D.				Star of Comp.						
1848.	h	m	s	h	m	s	°	'	"	"							
Nov. 19	7	47	40	20	7	59.58	+0.047	×	P	45	24	12.0	-0.30	×	P	Groom.	3110
24	6	58	18		30	2.81	028			51	5	55.1	32			B.A.C.	7167
28	6	22	58	20	47	3.00	026			56	7	54.6	36			H.C.	40373
Dec. 2	7	15	37	21	3	42.65	033			61	31	50.8	29			—	41162
4	6	36	18		11	43.60	026			64	13	9.6	49			—	41435
5	6	34	45		15	40.30	026			65	36	6.8	51			—	41637
6	6	50	30		19	41.37	028			67	1	0.6	54			B.A.C.	7474
9	7	43	13		31	22.06	034			71	15	32.7	63			—	7520
10	7	46	39		35	11.36	034			72	39	54.8	64			H.C.	42323
15	7	35	15	21	53	15.30	+0.032			79	32	7.6	-0.68			Weisse xxi,	1273

"P is the horizontal parallax of the comet in seconds of space. The observations were made with a bar-micrometer. There is probably an error of 1° in H. C. 42393, the N.P.D. should be 73° instead of 72°."

CAMBRIDGE, U.S.*

Equatoreal.

(Mr. W. C. Bond.)

1848.	Cambridge M.T.			R.A.			Decl.			
	h	m	s	h	m	s	°	'	"	
Nov. 25	6	55	41	20	35	11.2	+37	24	15	with Circles and <i>ε Cygni</i>
27	6	58	34		43	45.8	34	52	24.1	Lalande, 40277
29	6	55	53	20	47	57.35	+33	34	54.5	

On Nov. 25, at 6^h 56^m 41^s, comet follows a star of 9 mag. in 25°.6, and is 2' 25".1 to the north of it.

Approx. place of Star, R.A. = 20^h 34^m 45^s Decl. + 37° 22'.

"The comet has a nucleus resembling a star of 9.10 magnitude, so well defined that the motion became sensible in the course of one or two minutes. The coma radiates, and is about 5' in diameter. The tail extends about 20' opposite the sun. The places are referred to the mean equinox, Jan. 1, 1848."

Elements.

By M. d'Arrest.

Time of Perihelion Passage, 1849, Jan. 19.39335, Berlin M.T.

Long. Perihelion..... 63 16 1.9 } Mean Eq^s.

— Node..... 215 13 43.4 } 1849.0

i 85 2 11.5

Log. *q*..... 9.9820574. Motion direct.

By MM. Petersen and Sonntag.

Time of Perihelion Passage, 1849, Jan. 19.39136, Berlin M.T.

Long. Perihelion..... 63 12 34.7 } Mean Eq^s.

— Node..... 215 12 0.0 } 1849, Jan. 1.

i 85 3 38.9

Log. *q* 9.9822562. Motion direct.

"From the Altona observations of Oct. 26, Nov. 10, and Nov. 25."

* The comet was *discovered* on the evening of Nov. 25 by Mr. G. P. Bond.

By Mr. N. Pogson.

Time of Perihelion Passage, 1849, Jan. 19^h 37^m 27^s 44, Greenwich M.T.

Long. Perihelion..... 63° 11' 49".6 } Mean Eq^x.
 — Node..... 215° 10' 57".7 } 1849, Jan. 0.

i 85° 4' 19".54

Log. *q* 9.9822469. Motion direct.

“From Dr. Petersen's observations of Oct. 26, and Mr. Hind's on Nov. 4 and 12. All the small corrections have been taken into account.”

Ephemeris. By MM. Petersen and Sonntag, from their Elements.

For Six Hours Berlin Mean Time.

	R.A.	Hourly Variation.	Decl.	Hourly Variation.	Log. Dist ^e from Earth.	Log. Dist ^e from Sun.
1848.	° ' "	" "	° ' "	" "		
Nov. 30	313 49 0.1	+ 155.49	+ 31 18 15.1	— 200.18	9.97844	0.10916
Dec. 1	314 50 54.6	154.05	29 57 43.5	202.42	.97652	.10551
2	315 52 14.2	152.58	28 36 21.5	204.37	.97486	.10186
3	316 52 58.3	151.09	27 14 15.7	206.05	.97348	.09821
4	317 53 6.3	149.62	25 51 33.5	207.42	.97238	.09457
5	318 52 38.1	148.06	24 28 21.5	208.52	.97156	.09094
6	319 51 32.9	146.51	23 4 47.3	209.29	.97101	.08731
7	320 49 50.3	144.95	21 40 57.9	209.77	.97074	.08369
8	321 47 30.5	143.39	20 17 1.1	209.92	.97075	.08009
9	322 44 33.1	141.82	18 53 4.0	209.78	.97104	.07650
10	323 40 58.1	140.25	17 29 13.8	209.34	.97161	.07293
11	324 36 45.3	138.68	16 5 37.8	208.61	.97244	.06937
12	325 31 54.8	137.11	14 42 22.9	207.58	.97354	.06583
13	326 26 26.6	135.53	13 19 35.7	206.30	.97490	.06233
14	327 20 20.8	133.97	11 57 22.7	204.75	.97651	.05885
15	328 13 38.0	132.43	10 35 49.6	202.96	.97835	.05540
16	329 6 17.7	130.87	9 15 2.4	200.94	.98042	.05198
17	329 58 20.5	129.35	7 55 6.1	198.72	.98272	.04860
18	330 49 46.6	127.83	6 36 5.2	196.32	.98522	.04526
19	331 40 36.5	126.32	5 18 4.5	193.72	.98792	.04194
20	332 30 50.2	124.82	4 1 7.5	190.99	.99081	.03869
21	333 20 28.1	123.34	2 45 18.0	188.13	.99387	.03550
22	334 9 30.6	121.87	1 30 38.4	185.15	9.99709	.03236
23	334 57 58.3	120.43	+ 0 17 11.7	182.07	0.00046	.02926
24	335 45 51.3	118.99	— 0 55 0.5	178.93	.00397	.02623
25	336 33 9.9	117.56	2 5 56.1	175.71	.00760	.02326
26	337 19 54.9	116.17	3 15 34.4	172.47	.01134	.02038
27	338 6 6.3	114.78	4 23 54.0	169.18	.01518	.01757
28	338 51 44.8	113.43	5 30 54.9	165.89	.01910	.01483
29	339 36 50.8	112.10	6 36 36.6	162.59	.02310	.01218
30	340 21 25.2	110.82	7 40 59.4	159.31	.02716	.00960
31	341 5 27.5	109.55	8 44 3.3	156.02	.03128	.00712
1849.						
Jan. 1	341 48 58.6	+ 108.30	— 9 45 48.5	— 152.77	0.03544	0.00473

Ephemeris for Berlin Mean Noon.

	R.A.	Dec.	Log. Δ	Log. r
1849.				
Jan. 0	340 54.5	— 8 28.4	0.03025	0.00774
10	347 49.3	17 58.0	07256	9.98855
20	354 4.2	25 28.9	11169	98228
30	359 55.1	31 41.2	14426	9.99026
Feb. 9	5 41.2	36 53.0	16884	0.01080
19	11 44.2	41 21.5	18584	04022
March 1	18 27.7	45 19.6	19641	07460
11	26 15.7	48 55.1	20216	11086
21	35 34.4	52 9.0	20498	14705
31	46 48.0	54 54.2	20697	18206
April 10	60 7.0	56 54.5	21039	21536
20	75 9.6	—57 48.8	0.21743	0.24676

ENCKE'S COMET.

The following observation was made at Cambridge, U. S., with the circles of the equatoreal, corrected by α^2 Libræ :—

Cambridge M.T.

1848 Nov. 25 18^h 5^m 20^s R.A. = 14^h 52^m 59^s.4 N.P.D. 106° 44' 49"

The observation is corrected for refraction and instrumental error only, and the place is referred to the mean equinox, Jan. 1, 1848.

LIVERPOOL.

Equatoreal.

(Mr. Hartnup.)

	Greenwich M.T.	R.A.	Corr. Eph.	N.P.D.	Corr. Eph.	No. of Comps.
1848.	h m s	h m s	s	° ' "	' "	
Oct. 10	15 15 59	7 57 13.15	+36.80	36 56 31.0	+2 18.2	9 a
18	17 41 46	10 26 57.01	29.98	44 52 2.5	4 38.6	2 b
22	17 1 4	11 24 59.43	9.79	53 3 6.7	5 12.5	6 c
23	17 33 7	11 37 30.42	8.19	55 21 47.9	4 58.7	5 B.A.C. 3965
25	17 44 23	11 59 27.86	+ 6.39	59 58 11.7	+4 48.1	5 d

“ For the observations of Encke’s comet, four thick wires were placed so as to form a small square in the centre of the field. The hour-circle was set going nearly to sidereal time, the star and comet were brought alternately into the centre of the square, the time noted, and the hour-circle and declination-circle read off. The observations were made under the disadvantage of little previous experience, and the management of the clock was not at that time thoroughly acquired.”

“ The observations are corrected for parallax and refraction, and compared with the ephemeris published by the Superintendent of the *Nautical Almanac*. The corrections noted must be applied to the ephemeris to produce the observed places.”